

### Abstract

A new rotor for a positive displacement compressor is provided which includes a non-rotating rotor shaft, a rotatable rotor body having end surfaces and surrounding the rotor shaft, and a mechanism for rotating the rotor body around the shaft. The rotor may be either a male rotor or a female rotor, and a positive displacement compressor is also provided which includes the new male rotor, the new female rotor, and an internal drive mechanism. Such positive displacement compressor includes radial induction bearings, and the internal drive mechanism replaces an external drive mechanism.